

WHAT IS CLAIMED IS:

1. A semiconductor laser device comprising:

an emission layer formed on a substrate;

5 a semiconductor layer formed on said emission layer while constituting a convex ridge portion;

a current blocking layer consisting of a semiconductor formed to cover at least the side surfaces of said ridge portion;

10 a first metal electrode formed to be in contact with the upper surface of said ridge portion; and

convex support portions arranged on both sides of said ridge portion at a prescribed interval from said ridge portion.

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2. The semiconductor laser device according to claim 1, wherein

said current blocking layer consisting of a semiconductor is formed not on the upper surface of said ridge portion but on the upper surfaces of said support portions.

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3. The semiconductor laser device according to claim 2, wherein

25 said support portions are substantially flush with

the upper surface of said ridge portion.

4. The semiconductor laser device according to claim 1, wherein

5 said first metal electrode includes a plurality of metal electrode layers.

5. The semiconductor laser device according to claim 1, wherein

10 said first metal electrode includes an upper surface having an irregular shape reflecting the shape of said convex ridge portion, the shape of said support portions and the shape of said current blocking layer.

15 6. The semiconductor laser device according to claim 5, wherein

 the height of portions of said first metal electrode located on said support portions exceeds that of a portion located on said ridge portion.

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7. The semiconductor laser device according to claim 1, wherein

 said convex ridge portion and said support portions are mounted on a submount through a welding layer.

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8. The semiconductor device according to claim 7,
wherein

said first metal electrode is so mounted on said
submount that portions of said first metal electrode
5 located on said support portions are in contact with said
submount and a portion of said first metal electrode
located on said ridge portion is not in contact with said
submount.

10 9. The semiconductor device according to claim 1,
wherein

side surfaces of said support portions closer to end
surfaces of said semiconductor laser device are arranged
inward beyond said end surfaces of said semiconductor
15 laser device at a prescribed interval.

10. The semiconductor laser device according to claim
1, wherein

said current blocking layer covers side surfaces of
20 said support portions closer to end surfaces of said
semiconductor laser device, the upper surfaces of said
support portions and side surfaces of said support
portions closer to said ridge portion.

25 11. The semiconductor laser device according to claim

1, wherein

the thickness of said first metal electrode is at least 5 μm .

5 12. The semiconductor device according to claim 1, wherein

said first metal electrode contains a dopant having the same conductivity type as said semiconductor layer constituting said ridge portion.

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13. The semiconductor laser device according to claim 12, wherein

said semiconductor layer constituting said ridge portion consists of a group III-V compound semiconductor,

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and

said dopant, contained in said first metal electrode, having the same conductivity type as said semiconductor layer constituting said ridge portion includes at least one element selected from a group consisting of Zn, Cd, Be, Mg, Ca and Ba.

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14. The semiconductor laser device according to claim 1, wherein

a plurality of said convex support portions are arranged on each side of said ridge portion.

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15. The semiconductor laser device according to claim
1, wherein

said emission layer includes a plurality of emission
5 layers, formed on said substrate at a prescribed interval,
each having an emission portion, and

said semiconductor layer constituting said convex
ridge portion, said current blocking layer, said first
metal electrode and said convex support portions are
10 formed on each of said plurality of emission layers.

16. The semiconductor laser device according to claim
1, wherein

the interval between the lower end of said ridge
15 portion and the lower ends of said support portions is at
least 20 μm .

17. The semiconductor laser device according to claim
16, wherein

20 the interval between the lower end of said ridge
portion and the lower ends of said support portions is not
more than 100 μm .

18. The semiconductor laser device according to claim
25 16, wherein

said current blocking layer consists of a compound semiconductor containing aluminum.

19. A semiconductor laser device comprising:

5 an emission layer formed on a substrate;

a semiconductor layer formed on said emission layer while constituting a convex ridge portion;

a current blocking layer formed on a side of said ridge portion;

10 a first metal electrode formed to be in contact with the upper surface of said ridge portion; and

a second metal electrode, formed on said first metal electrode, superior in adhesiveness to said first metal electrode.

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20. The semiconductor laser device according to claim 19, wherein

said second metal electrode is formed to be in contact with said current blocking layer.

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21. The semiconductor laser device according to claim 19, wherein

said first metal electrode contains a dopant having the same conductivity type as said semiconductor layer
25 constituting said ridge portion.

22. The semiconductor laser device according to claim 21, wherein

said semiconductor layer constituting said ridge
5 portion consists of a group III-V compound semiconductor,
and

said dopant, contained in said first metal electrode,
having the same conductivity type as said semiconductor
layer constituting said ridge portion includes at least
10 one element selected from a group consisting of Zn, Cd, Be,
Mg, Ca and Ba.

23. The semiconductor laser device according to claim 19, wherein

15 the sum of the thicknesses of said first metal
electrode and said second metal electrode is at least 5 μm .

24. A method of fabricating a semiconductor laser
device, comprising steps of:

20 forming an emission layer on a substrate;

forming a semiconductor layer constituting a convex
ridge portion on said emission layer;

forming a current blocking layer consisting of a
semiconductor to cover at least the side surfaces of said
25 ridge portion; and

forming a convex support portion so that the interval between the lower end of said ridge portion and the lower end of said support portion is at least 20 μm .

5 25. The method of fabricating a semiconductor laser device according to claim 24, wherein

 said step of forming said support portion includes a step of forming said support portion so that the interval between the lower end of said ridge portion and the lower
10 end of said support portion is not more than 100 μm .

 26. The method of fabricating a semiconductor laser device according to claim 24, wherein

 said step of forming said current blocking layer
15 includes steps of:

 forming a mask consisting of a dielectric substance on the upper surface of said ridge portion, and

 crystal-growing said current blocking layer consisting of a semiconductor on a portion other than said
20 mask.